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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09 273,449	03 22 1999	SHINGO OHKAWA	1185.1045 JD	7147

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EXAMINER

CHUNG, DAVID Y

ART UNIT PAPER NUMBER

2871

DATE MAILED: 03 17 2003

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/273,449

Applicant(s)

OHKAWA ET AL.

Examiner

David Y. Chung

Art Unit

2871

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 18 December 2002.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☐ Claim(s) 1-17, 19, 21, 23, 25 and 27-29 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-17, 19, 21, 23, 25 and 27-29 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413) Paper No(s) \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

## DETAILED ACTION

### *Claim Rejections - 35 USC § 103*

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

1. Claims 1, 2, 4, 6, 9, 10, 12, 14, 17, 19, 23 and 27 rejected under 35 U.S.C. 103(a) as being unpatentable over Tai et al. (U.S. 5,671,994) in further view of Moriwaki et al. (U.S. 5,995,180), Wiltshire et al. (U.S. 5,479,281), and Wild (U.S. 3,963,312).

As to claims 1, 9 and 17, Tai et al. discloses a flat and transparent front-lighting system using microprisms for use in reflective displays. Note in figure 11, light source 64, and light pipe 14. The light pipe 14 has light incidence face 16, light control face 24, and light output face 26. The light control face 24 of light pipe 14 contains microprisms 46 shown in figure 11A, which promote the scattering of light. Tai et al. teaches that this type of lighting system can be used in reflective displays. See column 1, lines 5 – 10.

Tai et al. does not disclose a reflective display with a reflection plate disposed on the back face of the liquid crystal panel. However, this type of reflective display was well known and obvious for its high contrast and brightness, as evidenced by Moriwaki et al., Wiltshire et al., and Wild. See column 3, lines 1 – 5 and figure 1 of Moriwaki et al.

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See column 3, lines 27 – 31 and figure 1 of Wiltshire et al. See column 1, lines 58 – 61 and figure 1 of Wild. It would have been obvious to one of ordinary skill in the art at the time of invention to use this reflective display with the lighting system of Tai et al. because of the display's high contrast and brightness.

As to claims 2, 10 and 19, Tai et al. discloses in figure 11A, an expanded view of the light control face 24 of light pipe 14. Note the dot-like microprisms 46 that scatter light and promote emission.

As to claims 4, 12 and 23, Tai et al. discloses microprisms in figure 11A that can be construed as being roughened partial regions in the light control face of light pipe 14.

As to claims 6, 14 and 27, Tai et al. discloses microprisms that have dimensions such that they are almost invisible. It is obvious from figures 11 and 11A that the microprisms are extremely small. Furthermore, it was necessary for the microprisms to be extremely small in order to effectively promote light scattering.

2. Claims 3, 5, 7, 8, 11, 13, 15, 16, 21, 25, 28 and 29 rejected under 35 U.S.C. 103(a) as being unpatentable over Tai et al. (U.S. 5,671,994) in further view of Moriwaki et al. (U.S. 5,995,180), Wiltshire et al. (U.S. 5,479,281), Wild (U.S. 3,963,312), and Hira et al. (U.S. 5,961,198).

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As to claims 3, 11 and 21, Tai et al. does not teach arranging the microprisms in an irregular pattern. Hira et al. teaches disposing the dots or reflecting slant portions in a light guide for a backlighting system in a random manner. Hira et al. teaches that this random distribution prevents a moiré phenomenon that occurs due to interference of the dot array with other regular patterns such as liquid crystal cells, color filter, TFT pattern and/or black matrix array. See column 7, lines 40 – 50. It was well known and obvious that this teaching was applicable to front-lit displays as well as backlit displays. Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to arrange the microprisms of Tai et al. in a random manner in order to prevent a moiré phenomenon.

As to claims 5, 13 and 25, Tai et al. discloses microprisms in figure 11A that can be construed as being roughened partial regions in the light control face of light pipe 14.

As to claims 7, 8, 15, 16, 28 and 29, Tai et al. does not teach varying the light scattering property of the light pipe as a function of distance from the light source. Hira et al. teaches distributing the dots or reflecting slant portions such that the dot density is lower at the location closer to the light source. Hira et al. teaches that this type of dot distribution created uniform luminance distribution. See Table 1 and column 7, lines 53 – 55. It was well known and obvious that this teaching was applicable to front-lit displays as well as backlit displays. Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to vary the light scattering property of the

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light pipe as a function of distance from the light source in order to create uniform luminance distribution.

***Response to Arguments***

Applicant's arguments with respect to claims 1, 9 and 17 have been considered but are moot in view of the new ground(s) of rejection.

**Conclusion**

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to David Chung whose telephone number is (703) 306-0155. The examiner can normally be reached on Monday-Friday from 8:30 am to 5:00 pm.

TOANTON  
PRIMARY EXAMINER

David Chung  
GAU 2871  
03/03/03